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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,176	01/15/2004	Richard Reynolds	830_012	4849

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EXAMINER	
WEST, JEFFREY R	
ART UNIT	PAPER NUMBER
2857	
MAIL DATE	DELIVERY MODE
06/27/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/758,176	REYNOLDS ET AL.	
	Examiner	Art Unit	
	JEFFREY R. WEST	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Response to Pre-Brief Conference Request

2. In view of the Pre-Brief Conference Request filed on February 08, 2008, PROSECUTION IS HEREBY REOPENED. A new grounds of rejection is set forth below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Dechjaroen, "Performance Evaluation of Voice Over Internet Protocol", in view of U.S. Patent No. 6,665,317 to Scott and further in view of Rix et al., "Non-intrusive monitoring of speech quality in voice over IP networks".

With respect to claim 1, Dechjaroen discloses a method of assessing speech quality transmitted via a packet based telecommunications network comprising the steps of: storing a sequence of intercepted packets associated with a call (page 5, lines 6-8), each packet containing speech data (page 7, lines 1-4), and an indication of a transmission time of said intercepted packet (page 43, lines 15-17); storing with each intercepted packet an indication of an intercept time of said packet (page 48, lines 21-24); extracting a set of parameters from said sequence of intercepted packets (page 49, lines 1-10); wherein the extracting step comprises the sub steps of: generating a jitter parameter for each packet of said sequence of stored packets in dependence upon a difference between the transmission time of a stored packet and the transmission time of a preceding stored packet of the sequence and a difference between the intercept time of said stored packet and the intercept time of said preceding stored packet (page 49, lines 1-6 and Figure 29); generating a long term average jitter parameter (lt_jitter) for said stored packet in dependence upon the value of said jitter parameter (jitter) for said stored packet, the value of said jitter parameter for any preceding stored packets, and a predetermined adaptation rate (P) according to the equation: lt_jitter = (lt_jitter * P) + (abs (jitter) * (1 – P) (i.e. J = J+(|D(i – 1, i) | – J) / 16) (page 49, line 7 to page 50, line 3).

With respect to claim 9, Dechjaroen discloses an apparatus for assessing speech quality transmitted via a packet based telecommunications network comprising: means for storing a sequence of intercepted packets associated with a call (page 5, lines 6-8), each packet containing speech data (page 7, lines 1-4), and an indication of a transmission time of said packet (page 43, lines 15-17); means for storing with each intercepted packet an indication of an intercept time of said intercepted packet (page 48, lines 21-24); means for extracting a set of parameters from said sequence of intercepted packets (page 49, lines 1-10); wherein the means for extracting further comprises: means for generating a jitter parameter for each intercepted packet of said sequence of stored intercepted packets in dependence upon a difference between the transmission time of a stored intercepted packet and the transmission time of a preceding stored packet of the sequence and a difference between the intercept time of said stored intercepted packet and the intercept time of said preceding stored intercepted packet (page 49, lines 1-6 and Figure 29); means for generating a long term average jitter parameter (lt_jitter) for said stored packet in dependence upon the value of said jitter parameter (jitter) for said stored intercepted packet, the value of said jitter parameter for any preceding stored intercepted packets, and a predetermined adaptation rate (P) according to the equation: lt_jitter = (lt_jitter * P) + (abs (jitter) * (1 – P) (i.e. J = J+(|D(i – 1, i) | – J) / 16) (page 49, line 7 to page 50, line 3).

As noted above, the invention of Dechjaroen teaches many of the features of the claimed invention and while the invention of Dechjaroen does teach extracting a set

of jitter parameters including inter-packet jitter and long-term average jitter, Dechjaroen does not explicitly include means for determining a differential jitter parameter.

Scott teaches a method, system, and computer program product for managing jitter of packets across a VoIP system (column 1, line 65 to column 2, line 2) that calculates a long term jitter parameter in dependence upon a value of jitter for a stored packet and a value of jitter for any preceding stored packets (column 5, lines 22-23 and 41-46) and a differential jitter (i.e. jitter variance) in dependence upon the jitter parameter and the long term jitter parameter (column 5, lines 22-25).

It would have been obvious to one having ordinary skill in the art to modify the invention of Dechjaroen to explicitly include means for determining a differential jitter parameter of the extracted parameters, as taught by Scott, because, as suggested by Scott, the combination would have improved the speech quality analysis of Dechjaroen by determining a more complete group of jitter parameters including a jitter variation which would provide an indication as to the changes in the size of a packet from the start to destination thereby allowing the user to monitor such a size change for determining a point of insufficient quality and/or times of congestion (column 3, line 66 to column 4, line 4).

As noted above, the invention of Dechjaroen and Scott teaches many of the features of the claimed invention and while the invention of Dechjaroen and Scott does teach extracting a set of jitter parameters including inter-packet jitter, long-term

average jitter, and differential jitter, the combination does not specify determining an estimated mean opinion score in dependence upon said set of parameters.

Rix teaches non-intrusive monitoring of speech quality in VoIP networks comprising storing a sequence of intercepted packets, containing speech data, associated with a call (page 4, lines 23-24 and "Capture" in Figure 3), extracting a set of jitter parameters from said sequence of intercepted packets (page 5, line 4 and "Extract Params" in Figure 3), and generating, and inherently storing on a medium for user-visualization/analysis, an estimated mean opinion score in dependence upon said set of parameters (page 5, lines 5-6 and "Predict MOS" in Figure 3).

It would have been obvious to one having ordinary skill in the art to modify the invention of Dechjaroen and Scott to specify determining an estimated mean opinion score in dependence upon said set of parameters, as taught by Rix, because one having ordinary skill in the art would recognize that a mean opinion score is a common meter of VoIP quality and, as suggested by Rix, the combination would have improved the speech quality analysis of Dechjaroen and Scott by automatically determining a common index of speech quality in order to track quality over time, using the determined jitter variation/differential jitter of Dechjaroen and Scott, to provide a real-time measure of call quality (page 5, lines 15-28).

5. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Dechjaroen in view of Scott and Rix et al. and further in view of U.S. Patent Application Publication No. 2003/0018450 to Carley.

As noted above, Dechjaroen in combination with Scott and Rix teaches many of the features of the claimed invention and while the invention of Dechjaroen, Scott, and Rix does teach extracting a set of parameters from a sequence of packets including a jitter parameter, long term average jitter parameter, and differential jitter parameter, the combination does not specifically include determining a maximum or variance value of the measured parameters and a subsequent average of the maximum and/or variance value.

Carley teaches a system and method for providing composite variance analysis for network operation of a packet based network (0002, lines 1-9 and 0017, line 1 to 0024, line 3) comprising means for extracting and storing a jitter parameter performance metric for a sequence of packets (0041, lines 1-23) determining a variance statistic for the performance metric (0045, lines 1-8) and determining a subsequent standard deviation of the determined variance statistic (0047, line 4 to 0048, line 7), wherein the variance statistic includes a plurality of maximum values and standard deviations of sub-sequences of the performance metric (0068, lines 11-19). Therefore, Carley teaches determining both a maximum of the performance metric followed by a standard deviation of the maximum as well as a standard deviation of the performance metric followed by a subsequent standard deviation. It is further considered inherent that in order to determine each standard deviation, an

average and variance must first be determined (see for example, Internet Glossary of Statistical Terms, "Variance" and "Standard Deviation").

It would have been obvious to one having ordinary skill in the art to modify the invention of Dechjaroen, Scott, and Rix to include determining a maximum and variance value of the measured parameters and a subsequent average of the maximum and/or variance value, as taught by Carley, because the invention of Dechjaroen, Scott, and Rix does teach a method for assessing the quality of speech packets but provides no significant method for determining when a speech quality degrades below a desired level and the invention of Carley suggests that the combination would have improved the method of Dechjaroen, Scott, and Rix and by allowing the user to determine the quality with greater detail by determining how the performance of a given network server is performing with respect to any desired performance metric over time as well as determine whether the performance of a network service at any particular time is outside of acceptable limits (0040, lines 1-28).

Response to Arguments

6. Applicant's arguments with respect to claims 1-5 and 9 have been considered but are moot in view of the new ground(s) of rejection.

However, since the Scott reference is again being applied, the Examiner does note that the disclosure of Scott is only relied upon for teaching a differential jitter (i.e. jitter variance) in dependence upon the jitter parameter and the long term jitter

parameter and not to modify any long-term jitter calculation performed by the other cited references.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure:

Demichelis et al., "IP Packet Delay Variation Metric for IP Performance Metrics (IPPM) teaches methods for determining metrics for variation in delay of packets across Internet paths.

Internet Glossary of Statistical Terms, "Variance" and "Standard Deviation" teaches the definitions for "Variance" and "Standard Deviation" as well as that in order to calculate the variance, a mean/average must first be determined, as well as that in order to calculate the standard deviation, a variance must first be determined.

Schulzrinne teaches a method and system for determining jitter measurements of packets across IP in audio/voice applications ("2. RTP Use Scenarios" and "2.1 Simple Multicast Audio Conference") including means for generating a long term average jitter parameter (lt_jitter / J) for a stored packet in dependence upon a value of a jitter parameter (jitter / D (i –1, i)) for said stored packet, a value of said jitter parameter for any preceding stored packets, and a predetermined adaptation rate (P / 15/16) according to the equation lt_jitter = (lt_jitter * P) + (abs (jitter) * (1 – P) (i.e. J = J+(|D(i – 1, i) | – J) / 16) ("6.3.1 SR: Sender report RTCP packet").

U.S. Patent Application Publication No. 2003/0086425 to Bearden teaches network traffic generation and monitoring systems and methods for their use in testing frameworks for determining suitability of a network for target applications, such as VoIP network applications (0006, lines 1-10), comprising means for extracting a set of speech quality parameters, including jitter, and, generating an estimated mean opinion score in dependence upon the set of speech quality parameters (0085, lines 1-13) and storing the estimated mean opinion score on a computer-readable medium accessible by a user for visualization and analysis (0259, lines 1-19).

U.S. Patent Application Publication No. 2004/0071170 to Fukuda teaches a communication system, transmission terminal, and reception terminal

U.S. Patent No. 6,868,094 to Bordonaro et al. teaches a method and apparatus for measuring network data packet delay, jitter and loss.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY R. WEST whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571)272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffrey R. West/
Primary Examiner, Art Unit 2857

June 28, 2008